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## SEQUENCE LISTING

&lt;110&gt; Viventia Biotech Inc.

<120> ENHANCED PHAGE DISPLAY LIBRARIES AND METHODS FOR  
PRODUCING SAME

&lt;130&gt; 33956-49

&lt;140&gt; US10/070,503

&lt;141&gt; 2000-09-07

&lt;150&gt; PCT/CA00/01027

&lt;151&gt; 2000-09-07

&lt;150&gt; CA2282179

&lt;151&gt; 1999-09-07

&lt;150&gt; US60/163,546

&lt;151&gt; 1999-11-04

&lt;160&gt; 60

&lt;170&gt; PatentIn Ver. 2.1

&lt;210&gt; 1

&lt;211&gt; 396

&lt;212&gt; DNA

&lt;213&gt; human

&lt;400&gt; 1

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gaggtccagc tgcaggagtc tgggggaggc ttagtccagc ctgggggggc cctgagactc 60
tctgttcag cctctggatt caccttcagt agctatgcta tgcactgggt ccgccaggct 120
ccaggggaagg gactggaata tgtttcagct attagtagta atgggggtag cacatactac 180
gcagactccg tgaagggcag attcaccatc tccagagaca attccaagaa cactctgtat 240
cttcaaata gaagctctgag agctgaggac acggctgtgt attactgtgt gaaagacagg 300
ttaaaagtgg agtactatga tagtagtggt tattacgttt ctcggttcgg tgcttttgat 360
atctggggcc aagggacaac ggtcaccgtc tcatca 396

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&lt;210&gt; 2

&lt;211&gt; 132

&lt;212&gt; PRT

&lt;213&gt; human

&lt;400&gt; 2

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Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20             25             30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Val
 35             40             45
Ser Ala Ile Ser Ser Asn Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
 50             55             60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65             70             75             80

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Leu Gln Met Ser Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
                             85                            90                            95

Val Lys Asp Arg Leu Lys Val Glu Tyr Tyr Asp Ser Ser Gly Tyr Tyr  
                             100                            105                            110

Val Ser Arg Phe Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr Thr Val  
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Thr Val Ser Ser  
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 <212> PRT  
 <213> human

<400> 3  
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<210> 4  
 <211> 16  
 <212> PRT  
 <213> human

<400> 4  
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<210> 5  
 <211> 23  
 <212> PRT  
 <213> human

<400> 5  
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Arg Phe Gly Ala Phe Asp Ile  
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<220>  
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<220>  
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<220>  
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<220>  
 <221> variable length  
 <222> (16)...(18)  
 <223> The nucleotides at these positions may be repeated

<400> 6  
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33

<210> 7  
 <211> 18  
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<220>  
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<400> 7  
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18

<210> 8  
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<400> 8  
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42

<210> 9  
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 <212> DNA  
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<220>  
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<400> 9  
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38

<210> 10  
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<400> 10

tttcacacag taatacac

18

<210> 11

<211> 57

<212> DNA

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<223> Description of Artificial Sequence:primer

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<210> 12

<211> 35

<212> DNA

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<220>  
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<210> 15  
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<400> 15  
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21

<210> 16  
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 <213> Artificial Sequence

<220>  
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<400> 16  
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<210> 17  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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<400> 17  
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24

<210> 18  
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<220>  
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<400> 18

caattacaag ctagtggtgg c

21

<210> 19  
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 <212> DNA  
 <213> Artificial Sequence

<220>  
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<400> 19  
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39

<210> 20  
 <211> 38  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:primer

<400> 20  
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38

<210> 21  
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 <212> DNA  
 <213> Artificial Sequence

<220>  
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<220>  
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<220>  
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<220>  
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 <222> (22)...(24)  
 <223> The nucleotides at these positions may be repeated

<400> 21  
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42

<210> 22

<211> 54  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:primer

<400> 22  
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<210> 23  
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<220>  
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<400> 23  
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<210> 24  
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<220>  
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<400> 24  
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<210> 25  
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 <212> DNA  
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<220>  
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<400> 25  
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<400> 26  
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<210> 27

<211> 54  
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 <213> Artificial Sequence

<220>  
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<400> 27  
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<210> 28  
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 <212> DNA  
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<220>  
 <223> Description of Artificial Sequence:primer

<400> 28  
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<210> 29  
 <211> 35  
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<220>  
 <223> Description of Artificial Sequence:primer

<400> 29  
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<400> 30  
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 gagtct 66

<210> 31  
 <211> 22  
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<220>  
 <223> Description of Artificial Sequence:primer

<400> 31  
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<210> 32  
 <211> 51  
 <212> DNA  
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<220>  
 <223> Description of Artificial Sequence:primer

<400> 32  
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<210> 33  
 <211> 51  
 <212> DNA  
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<220>  
 <223> Description of Artificial Sequence:primer

<400> 33  
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<210> 34  
 <211> 24  
 <212> DNA  
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<220>  
 <223> Description of Artificial Sequence:primer

<400> 34  
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<210> 35  
 <211> 35  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:primer

<400> 35  
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<210> 36  
 <211> 396  
 <212> DNA  
 <213> human (modified)

<400> 36  
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 ccagggaagg aacgtgaagg tgtttcagct attagtagta atgggggtag cacatactac 180  
 gcagactccg tgaagggcag attcaccatc tccagagaca attccaagaa cactctgtat 240  
 cttcaaatga gcagtctgag agctgaggac acggctgtgt attactgtgc agcagacagg 300  
 ttaaaagtgg agtactatga tagtagtggt tattacgttt ctcggttcg tgcttttgat 360

atctggggcc aagggaacaac ggtcaccgtc tcatca

396

<210> 37  
 <211> 132  
 <212> PRT  
 <213> human (modified)

<400> 37  
 Glu Val Gln Leu Gln Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
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 Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
                   20                  25                  30  
 Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Glu Arg Glu Gly Val  
           35                  40                  45  
 Ser Ala Ile Ser Ser Asn Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val  
           50                  55                  60  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
           65                  70                  75                  80  
 Leu Gln Met Ser Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
                   85                  90                  95  
 Ala Ala Asp Arg Leu Lys Val Glu Tyr Tyr Asp Ser Ser Gly Tyr Tyr  
           100                  105                  110  
 Val Ser Arg Phe Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr Thr Val  
           115                  120                  125  
 Thr Val Ser Ser  
           130

<210> 38  
 <211> 396  
 <212> DNA  
 <213> human (modified)

<400> 38  
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 ccagggaagg gactggaata tgtttcagct attagtagta atgggggtag cacatactac 180  
 gcagactccg tgaagggcag attcaccatc tccagagaca attccaagaa cactctgtat 240  
 cttcaaatga gcagtctgag agctgaggac acggctgtgt attactgtgt gaaagacagg 300  
 ttaaaagtgg agtactatga tagtagtggt tattacgttt ctcggttcgg tgcttttgat 360  
 atctggggcc aagggaacaac ggtcaccgtc tcatca 396

<210> 39  
 <211> 132  
 <212> PRT  
 <213> human (modified)

<400> 39  
 Glu Val Gln Leu Gln Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
           1                  5                  10                  15

Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
                   20                                  25                                  30

Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Val  
                   35                                  40                                  45

Ser Ala Ile Ser Ser Asn Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val  
                   50                                  55                                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
                   65                                  70                                  75                                  80

Leu Gln Met Ser Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
                                   85                                  90                                  95

Val Lys Asp Arg Leu Lys Val Glu Tyr Tyr Asp Ser Ser Gly Tyr Tyr  
                                   100                                  105                                  110

Val Ser Arg Phe Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr Thr Val  
                   115                                  120                                  125

Thr Val Ser Ser  
                   130

<210> 40  
 <211> 396  
 <212> DNA  
 <213> human (modified)

<400> 40  
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 ccagggaagg aacgtgaagg tggttcagct attagtagta atgggggtag cacatactac 180  
 gcagactccg tgaagggcag attcaccatc tccagagaca attccaagaa cactctgtat 240  
 cttcaaatga gcagtctgag agctgaggac acggctgtgt attactgtgc agcagacagg 300  
 ttaaaagtgg agtactatga tagtagtggt tattacgttt ctcggttcgg tgcttttgat 360  
 atctggggcc aagggacaac ggtcaccgtc tcatca 396

<210> 41  
 <211> 132  
 <212> PRT  
 <213> human (modified)

<400> 41  
 Glu Val Gln Leu Gln Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
           1                                  5                                  10                                  15

Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
                   20                                  25                                  30

Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Glu Arg Glu Gly Val  
                   35                                  40                                  45

Ser Ala Ile Ser Ser Asn Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val  
                   50                                  55                                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr

65		70		75		80									
Leu	Gln	Met	Ser	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
			85						90					95	
Ala	Ala	Asp	Arg	Leu	Lys	Val	Glu	Tyr	Tyr	Asp	Ser	Ser	Gly	Tyr	Tyr
			100					105					110		
Val	Ser	Arg	Phe	Gly	Ala	Phe	Asp	Ile	Trp	Gly	Gln	Gly	Thr	Thr	Val
		115					120					125			
Thr	Val	Ser	Ser												
	130														

<210> 42  
 <211> 396  
 <212> DNA  
 <213> human (modified)

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 ccaggggaagg aacgtgaagg tggttcagct attagtagta atgggggtag cacatactac 180  
 gcagactccg tgaagggcag attcaccatc tccagagaca attccaagaa cactctgtat 240  
 cttcaaatga gcagtctgag agctgaggac acggctgtgt attactgtgc agcagacagg 300  
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 atctgggggcc aagggacaac ggtcaccgtc tcatca 396

<210> 43  
 <211> 132  
 <212> PRT  
 <213> human (modified)

<400> 43  
 Glu Val Gln Leu Gln Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
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 Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
 20 25 30  
 Cys Met His Trp Val Arg Gln Ala Pro Gly Lys Glu Arg Glu Gly Val  
 35 40 45  
 Ser Ala Ile Ser Ser Asn Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val  
 50 55 60  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
 65 70 75 80  
 Leu Gln Met Ser Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Ala Asp Arg Leu Lys Val Glu Tyr Tyr Asp Ser Cys Gly Tyr Tyr  
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 Val Ser Arg Phe Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr Thr Val  
 115 120 125

Thr Val Ser Ser  
130

<210> 44  
<211> 396  
<212> DNA  
<213> human (modified)

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ccagggaagg gactggaata tgtttcagct attagtagta atgggggtag cacatactac 180  
gcagactccg tgaagggcag attcaccatc tccagagaca attccaagaa cactctgtat 240  
cttcaaata gaagctctgag agctgaggac acggctgtgt attactgtgt gaaagacagg 300  
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atctggggcc aagggacaac gggtaccgct tcacatca 396

<210> 45  
<211> 132  
<212> PRT  
<213> human (modified)

<400> 45  
Glu Val Gln Leu Gln Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15  
Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
20 25 30  
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Val  
35 40 45  
Ser Ala Ile Ser Ser Asn Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val  
50 55 60  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
65 70 75 80  
Leu Gln Met Ser Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95  
Val Lys Asp Arg Leu Lys Val Glu Tyr Tyr Asp Ser Ser Gly Tyr Tyr  
100 105 110  
Val Ser Arg Phe Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr Thr Val  
115 120 125  
Thr Val Ser Ser  
130

<210> 46  
<211> 23  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:recombinant

## A6-derived peptide

&lt;400&gt; 46

Val	Gln	Tyr	Gly	Lys	His	Arg	Arg	Gly	Ser	Cys	Ile	Glu	Val	His	Pro
1				5				10						15	

Glu	Tyr	Lys	Asp	Phe	Asp	Ile
			20			

&lt;210&gt; 47

&lt;211&gt; 23

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence:recombinant  
A6-derived peptide

&lt;400&gt; 47

Asn	Pro	Pro	Lys	Pro	Gly	Ala	Gln	Ala	Arg	Cys	Val	Thr	Thr	Val	Lys
1				5				10						15	

Asp	Tyr	Lys	Glu	Phe	Asp	Ile
			20			

&lt;210&gt; 48

&lt;211&gt; 23

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence:recombinant  
A6-derived peptide

&lt;400&gt; 48

Ala	Ala	Ile	Gln	Thr	Glu	Thr	Ala	Arg	Trp	Cys	Asp	Arg	His	Pro	Val
1				5				10						15	

Ser	Tyr	Lys	Met	Phe	Asp	Ile
			20			

&lt;210&gt; 49

&lt;211&gt; 23

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence:recombinant  
A6-derived peptide

&lt;400&gt; 49

Gln	Thr	Glu	Thr	Gln	Pro	Leu	Tyr	Asn	Asp	Cys	Ile	Leu	Arg	Gln	Ala
1				5				10						15	

Gly	Tyr	Lys	Trp	Phe	Asp	Ile
			20			

<210> 50  
 <211> 23  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:recombinant  
 A6-derived peptide

<400> 50  
 Met His Thr Leu Gln His Tyr Arg Asn Leu Cys Ser Tyr Gln Leu Ala  
           1                  5                  10                  15  
 Asp Tyr Lys His Phe Asp Ile  
                   20

<210> 51  
 <211> 23  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:recombinant  
 A6-derived peptide

<400> 51  
 Gly Leu Ser Gly Ser Arg Pro Asn Glu Gln Cys Asp Tyr Lys Thr Gly  
           1                  5                  10                  15  
 Asp His Val Gln Phe Asp Ile  
                   20

<210> 52  
 <211> 23  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence:recombinant  
 A6-derived peptide

<400> 52  
 Leu Ser Gly Gln Asn Tyr Thr Lys Thr Arg Cys Leu Val Met Gln Asn  
           1                  5                  10                  15  
 Asp Tyr Lys Met Phe Asp Ile  
                   20

<210> 53  
 <211> 23  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:recombinant  
 A6-derived peptide

&lt;400&gt; 53

Thr Ala Glu Pro Ala Leu Ser Pro Gln Ala Cys Met Thr Lys Glu Arg  
 1 5 10 15

Gln Tyr Lys Asp Phe Asp Ile  
 20

&lt;210&gt; 54

&lt;211&gt; 23

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence:recombinant  
 A6-derived peptide

&lt;400&gt; 54

Glu Thr Tyr Met Tyr Thr Arg Gly Lys Tyr Cys Arg Ala Leu Ser Ala  
 1 5 10 15

Asp Tyr Lys Leu Phe Asp Ile  
 20

&lt;210&gt; 55

&lt;211&gt; 23

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence:recombinant  
 A6-derived peptide

&lt;400&gt; 55

Glu Thr Tyr Met Tyr Thr Arg Gly Lys Tyr Cys Arg Ala Leu Ser Ala  
 1 5 10 15

Asp Tyr Lys Leu Phe Asp Ile  
 20

&lt;210&gt; 56

&lt;211&gt; 23

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence:recombinant  
 A6-derived peptide

&lt;400&gt; 56

Gly Ser Gln Ala Ile Lys Asn Leu Ser Glu Cys Leu Val Arg Ser Asp  
 1 5 10 15

Asp Tyr Lys Lys Phe Asp Ile  
 20



<210> 57  
 <211> 23  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:recombinant  
 A6-derived peptide

<400> 57  
 Gly Arg Tyr Phe Gln Ser Lys Ile Thr Ser Cys Glu Asn Asn Asp Arg  
 1 5 10 15

Asp Tyr Lys Leu Phe Asp Ile  
 20

<210> 58  
 <211> 23  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:recombinant  
 A6-derived peptide

<400> 58  
 Val Gln Tyr Gly Lys His Arg Arg Gly Ser Ser Ile Glu Val His Pro  
 1 5 10 15

Glu Tyr Lys Asp Phe Asp Ile  
 20

<210> 59  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:primer

<400> 59  
 gccaccacta gcttgtaatt g 21

<210> 60  
 <211> 54  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:primer

<400> 60  
 caattacaag aaagtgggtg cggactggtg caaccaggag gatccctgag actc 54